

Letter 10 Continued

10-23 Impacts to soils is an additional concern. Although the Applicant modeled the impact of the Project on these soils and concluded that the increase in nitrogen would be small, the Applicant's analysis apparently failed to include the contribution of ammonia emissions to secondary PM10, most of which is ammonium nitrate. This additional PM-10 of nitrogen compounds from conversion of ammonia would increase the Project's reported contribution to soil nitrogen. The impact of this additional ammonium nitrate has not been evaluated and must be to fully evaluate the environmental impacts of the project.

Ammonia emissions are discussed further in the following comments. These types of reactions, are a potentially significant impact that should be discussed in the DEIS.

PM₁₀ FORMATION CAUSES VISIBILITY REDUCTION

The fact that ammonia/PM reactions actually occur and cause visibility impacts is well documented in the technical literature. A noted atmospheric textbook, for example, contains this vivid description of the problem (Pitts and Pitts, 1999,⁷ p. 284):

10-24 "The formation of ammonium nitrate has some interesting implications for visibility reduction. In the Los Angeles air basin, for example, the major NOx sources are at the western, upwind end of the air basin. Approximately 40 miles east in the vicinity of the city of Chino, there is a large agricultural area that has significant emissions of ammonia...under typical meteorological conditions, air is carried inland during the day, with NOx being oxidized to HNO3 as the air mass moves downwind. When it reaches the agricultural area, the HNO3 reacts with gaseous NH3 to form ammonium nitrate...the particles formed by such gas-to-particle conversion processes are in the size range where they scatter light efficiently, giving the appearance of a very hazy or smoggy atmosphere even though other manifestations of smog such as ozone levels may not be highly elevated."

AMMONIA

The proposed power plant will use, handle, store and transport large amounts of ammonia. Ammonia is listed on the EPA's list of extremely hazardous chemicals. The State of Louisiana has recently tightened regulations governing handling of ammonia.

10-25 The use and storage of hazardous chemicals such as ammonia should be minimized. Nonetheless, the Wanapa plant proposes to transport, use and store large quantities of ammonia on site.

The DEIS should have described and addressed the possible consequences of transporting, piping, storing and emitting hundreds of thousands of pounds of ammonia at this facility every year.

⁷ Barbara J. Finlayson-Pitts and James N. Pitts, Jr., Chemistry of the Upper and Lower Atmosphere: Theory, Experiments, and DEISs, Academic Press, San Diego, 1999.

Responses to Letter 10

10-24 See responses to Comments 10-21 and 2-1.

10-25 Transport, storage and use of all chemicals, including ammonia, would be in accordance with all applicable laws, regulations and ordinances. These chemicals are currently used in all generating plants operating in the region. The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals.

A detailed analysis of the incidents of "Hypothetical Ammonia Releases," which is the most likely chemical release accident to occur at the facility with the potential for off-site impacts was included in the Environmental Impact Statement for the proposed Wallula Power Plant Project. Due to the proximity of the Wallula plant to the project area, and the similarity of their environments, the results of that analysis is applicable to the Wanapa project.¹

¹Web address for Wallula Final EIS.

Letter 10 Continued

10-25 There are two issues regarding ammonia. The first issue is the constant release of ammonia from this facility under normal operating conditions. The second issue is the risk of ammonia releases from the storage and transportation of this hazardous chemical.

AMMONIA EMISSIONS UNDER NORMAL OPERATING CONDITIONS

10-26 Ammonia may be emitted from the project at 5 parts per million (ppm). Other ammonia sources in this area which could contribute to an ambient ammonia level, including other power plants, fertilizer production and use, and animal feed lot and processing facilities. The DEIS should have discussed controls for ammonia, and additional modeling that accounts for potential ambient levels of ammonia that would cumulatively join with the proposed facility's emissions.

RISKS OF AMMONIA RELEASES

The plant will store hundreds of thousands of pounds of ammonia on site, and millions of pounds of ammonia will be transported to this site every year. But the DEIS does not describe the likelihood of a transportation accident, the numbers of truck trips bearing ammonia, the possible size of any ammonia releases from a truck accident, the neighborhoods and businesses that would be threatened by a release, or the risk and effects of a release from the ammonia tanks at the power plant, including the risk and effect of a tank failure.

10-27 The DEIS should discuss this troubling subject, of large scale ammonia releases from transport and storage of large amounts of ammonia on the site. Ammonia releases are fairly common. A study submitted to the Congress revealed there have been over 1000 ammonia releases over one nine year period, which caused 801 injuries, 9 deaths, and 61 evacuations of over 22,000 people.⁸ For this reason we urge the DEIS to discuss ammonia hazards from storage and transport, and any requirements to comply with the CAA amendments governing storage reporting, and transport of ammonia and other hazardous materials.

For instance, there was a release of ammonia in August, 2001 from the Pratt & Whitney power plant in East Hartford, Conn., that caused the shutdown of nearby streets for five hours and led to the evacuation of 20 people. For this reason the commentors urge that the DEIS should have discuss ammonia hazards, and the ability to respond, from storage and transport releases, and any requirements to comply with the CAA amendments governing storage and transport of ammonia and other hazardous materials.

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

Report to Congress Section 112(r) (10) Clean Air Act as Amended. EPA 550-r-93-002. December, 1993.

Responses to Letter 10

10-26 See the responses to Comments 10-21 and 2-1.

10-27 The risks associated with the proposed use of aqueous ammonia (19 percent solution of ammonia in water) are much lower than those associated with anhydrous ammonia. Aqueous ammonia is not on the USEPA's list of extremely hazardous chemicals. As the commenter accurately points out, most of the hazards and consequences listed by the commenter are associated with use of *anhydrous* ammonia and not aqueous Ammonia. A spill of aqueous ammonia would behave as any liquid spill and the emergency team would immediately responded to minimize potential impacts to environmental resources or the local population. The transportation, storage, and handling of the aqueous Ammonia would be in accordance with the applicable and governing laws, regulations, codes and standards. The use of SCONO_x is discussed in response to Comment 10-22 above.

The facility would be subject to the USEPA's Accidental Release Prevention Program (ARPP) regulations for ammonia (40 CFR Part 68). The ARPP would require the facility to implement the following procedures to minimize the potential for accidental releases.

- Develop a quality control program to ensure that all equipment used in the ammonia system is designed according to industry standards.
- Develop standard operating procedures for operation, inspection, and maintenance of the ammonia system.
- Conduct annual worker training for the ammonia system.
- Conduct a Process Hazard Analysis for the ammonia system to identify equipment or operations with a potential for accidental release, then mitigate those identified problems.
- Develop an Emergency Response Plan for the ammonia system, describing alarms and procedures to repair leaking equipment.
- Submit a Risk Management Plan to the USEPA, predicting the downwind impacts caused by hypothetical accidental releases of ammonia.
- Conduct periodic audits of the accidental release prevention program.

Letter 10 Continued

The DEIS evaluation should have studied alternatives on the types of ammonia to be stored and used, for instance the use of urea instead of ammonia, and alternative transport methods for ammonia. While the DEIS suggests that aqueous rather than anhydrous ammonia may be used, urea would be even safer.

The DEIS' evaluation should also study the potential impacts of large scale ammonia releases from different site locations, and the release impacts from different types of transport accidents. The alternative of siting the plant farther from populated areas and from the State Highway, to reduce the public's exposure from ammonia releases, should have been discussed.

SOME RECENT RELEASES OF AMMONIA (not a complete list)

evacuations	injuries	location	gallons released
36	1300	Minot, ND	about 140,000
280	4	Washington, IND	Not provided
1000	65	Quebec	" "
1500	0	Morro Bay, CA	300
100-300	n/a	Wauwatosa, WI	n/a
100	n/a	Columbus, IA	na

The Project may be subject to the Title III requirements regarding storage of hazardous materials, but those requirements, including a hazard assessment and risk management program, have not yet been developed and reviewed by the public and the relevant agencies. These requirements should have been fulfilled in time for these proceedings, so that the public can evaluate this project's risks in a single round of reviews and meetings.

The US Chemical Safety and Hazard Investigation Board web site contains examples of recent releases, of ammonia, and the often tragic consequences. Many of those incidents described releases of anhydrous ammonia. But aqueous ammonia, which may be used at the plant, still presents a risk of release.

Discussion of use of alternative forms of ammonia, or no ammonia at all through use of a SNOx pollution reduction system, should have been required as part of a complete DEIS. This proposed development should have described in the DEIS how it will mitigate its potential ammonia-related impacts to the maximum extent possible. Wanapa has not demonstrated that it has mitigated the potential impacts of its use of ammonia to the maximum extent possible, for instance by use of alternative forms of ammonia, namely urea pellets.

PM-10 AIR EMISSIONS

The subject of the health and environmental effects of PM-10 should be presented in depth in the DEIS. While EPA regulates PM-10 emissions, EPA will ignore PM-10 emissions that do not exceed the legal standards. But many recent studies identify adverse impacts from concentrations of PM-10 that are below legal limits. Since PM-10 concentration at those levels are not part of

Responses to Letter 10

10-28 See response to Comment 6-2.

The project would have an impact on ambient concentrations of PM₁₀. Based on dispersion modeling of the facility, it has been determined that the project's impacts would be below modeling significance thresholds at most locations in the vicinity. These significance thresholds are set at levels representing 2 percent of the annual National Ambient Air Quality Standard (NAAQS) for PM₁₀, and 3.3 percent of the 24-hour NAAQS for PM₁₀. The locations where an impact is modeled at levels higher than the modeling significance thresholds are shown in the figures provided with the response to Comment 6-2 for the two different averaging periods. The maximum impact from Wanapa at any location and time is 8.73 µg/m³ on an annual average (17 percent of the annual NAAQS), and 28.52 µg/m³ on a 24-hour average (19 percent of the 24-hour NAAQS).

The USEPA, as required by the Clean Air Act, sets the relevant NAAQS at levels that protect public health with an adequate margin of safety. The standards are scientifically based and undergo review at least every ten years, and include a public involvement process and review by the Clean Air Scientific Advisory Committee. Pollutants in the ambient air at levels below the NAAQS may still result in some health impacts in certain portions of the population.

A refined, or more detailed analysis has been conducted at locations where Wanapa shows a significant impact in the significance modeling analysis. This refined analysis, provided in the PSD application to the USEPA, demonstrates that the impacts from Wanapa, when added to the impacts from other nearby sources and background PM₁₀ concentrations, would remain below the NAAQS and PSD Increments even at the locations with the highest localized impact.

Letter 10 Continued

EPA's regulatory authority, the DEIS should have reviewed this issue.

Many recently published studies demonstrate that PM-10 and TSP are far more harmful than previously considered. It appears from these studies that any increase in PM-10 and TSP levels will cause an adverse health impact.

In one study of the Seattle area, days of high particulate concentrations in the air were correlated with increased hospital visits for asthma. In another series of similar studies, days of high particulate concentrations were correlated with days of high death rates in Santa Clara, California, Steubenville, Ohio, Birmingham, Alabama, and Philadelphia, Pennsylvania, among seven separate studies on this topic. Particulate have been recently, convincingly implicated in harm to pulmonary function.

PM-10 will be emitted by the power plant smokestacks. Construction will also create about 1 ton of TSP per acre of disturbance per month, and over 100 acres will be disturbed. Construction equipment, truck and car traffic related to this project, both in the construction and operation stage, will be an additional PM-10 and TSP source.

10-28 But the DEIS, in its discussion of this topic at 3.4-15, did not even attempt to quantify these potentially significant PM-10 emissions, even though the plant's PM-10 emissions are already exceeding the significance thresholds. Surface disturbance activity by itself, can create about 1 ton per acre of PM emissions per month, and the tailpipe PM emissions from the dozens of pieces of heavy equipment during this two year construction job will add to this already significant tonnage.

Some important conclusions from these studies is that harmful health effects occur even when particulate concentrations are below the legal limits, there is no apparent particulate threshold for adverse health effects, and that harmful health effects are apparently caused by very minor increase in particulate concentrations. This means that even though the Project will not cause violations of the PM legal limits it could still cause significant health impacts.

Again, this means that increases in PM-10 concentrations will not be limited by EPA, because the legal limits will not be violated. However, these many recent studies suggest there are adverse impacts from PM-10 increases that are below the legal limits. Since EPA will not regulate these increases, we ask Forest Service to require the applicant to address mitigation for its PM-10 increases, perhaps by assisting in reductions of PM-10 emissions from other sources, such as road dust. There are important environmental impacts from PM-10 emissions, also.

ADDITIONAL AGENCIES SHOULD HAVE BEEN INCLUDED AS COOPERATING AGENCIES

10-29 NEPA urges federal agencies to seek a cooperative posture with state agencies, in its section titled Elimination of duplication with State and local authorities (40 CFR 1506.2 (b):

" (Federal) Agencies will cooperate with State and local agencies to the fullest extent

Responses to Letter 10

10-29 The scope of the project is unique in that a portion of the project is exempt from EFSC (the plant site) because of the location of the project on tribal land. The BIA's obligation under NEPA is to address the entire project so that impacts of the components are disclosed. However, consistent with many other projects, authorizations must also be obtained from other federal as well as state and local agencies for the project to proceed. The BIA, the BPA, and the Reclamation Records of Decision would document that these other approvals must be obtained prior to the beginning of construction. The project, although not directly under EFSC jurisdiction, would still comply and exceed EFSC environmental trust fund requirements over the life of the facility.

As NEPA requires, all federal, state and tribal agencies and interested and affected publics have been kept informed of the process. Direct solicitation for comments from the agencies involved including the State has been made.

Letter 10 Continued

possible to avoid duplication between NEPA and State and local requirements."

A joint NEPA document, with local agencies as cooperating agencies, could better study the individual and cumulative impacts, and appropriate mitigation measures, in a single comprehensive document. This type of review would provide a more useful analysis of these impacts and meaningful mitigation measures.

EPA will issue air and water permits. EFSC will issue a Site Certificate. The Department of Reclamation has oversight over the reservoir. The Army Corps will issue wetlands fill permits. All of these permitting agencies should cooperate and conduct an efficient environmental review. Having BIA and BPA go it alone with a separate EIS will not allow for a comprehensive scrutiny of the project that would protect the environment and allow for adequate mitigation.

In contrast, the Washington State permitting agencies acted as cooperating agencies with the BPA in the NEPA project review for several power plants, including the Wallula, Plymouth, Starbuck, and Mercer Ranch projects. Specifically, the DEIS' failure to involve the state water resources agencies in this process, may have been a factor in the DEIS' neglect of the true impact of a large water withdrawal from the Columbia River. These State agencies have been grappling for years with this very issue and the acknowledgment that the River may be oversubscribed.

PIPELINE IMPACTS NOT COMPLETELY DISCUSSED

The proposed power plant and its support facilities include a ten mile natural gas pipeline. There are many other natural gas pipelines around the country, and in the Northwest, that were constructed according to federal standards. But in the Northwest alone, natural gas pipelines have blown up five times within the last five years. The DEIS should describe these potential impacts and additional mitigation measures to make sure this problem does not reoccur.

For instance, A gas pipeline near Bonneville Dam, recently exploded and burned on February 27, 1999. The roar from the explosion was heard for two miles. The 300 foot high fireball was so huge it was visible in Madras, even though the explosion was miles away. Route 14 in Washington was closed to protect the public. Press accounts state that earth movement from recent heavy rains may have been responsible for the pipeline break. The fire destroyed a resort hotel that was under construction and a nearby dwelling.

Near Kalama, Washington, a natural gas pipeline broke in February, 1997. Again, a 300 foot high fireball blazed into the sky. And just one day earlier, the same pipeline exploded and burned near Bellingham, Washington.

In March of 1995, that same pipeline had ruptured and blew up near Castle Rock, Washington. After that 1995 explosion, the company removed soil from 300 feet of the pipeline, to relieve any stress. But less than two years later, it blew up again. Again, soil movement was the cause of the pipeline breakage, according to published accounts.

- 21 - of 32

Responses to Letter 10

10-25 Natural gas pipeline accidents can result in evacuation of local population, property damage, and personal injury. The potential for pipeline accidents is determined by a number of events, including human activity near the pipeline, corrosion rates, incident history, operational regime, adequacy of maintenance, inspection and surveillance programs, and length of pipe. The impacts of an incident also are governed by a number of factors, especially the diameter of the pipe, operating pressure, and proximity of humans to the pipeline.

Most of the northwest and national incidents described in the comment occurred on main natural gas transmission lines that are usually 24 to 36 inches in diameter, transport large volumes of gas at high pressure (typically 2,500 psi) and have long distance routes, often through highly populated areas. As a consequence, the potential for a more severe incident is greater than for smaller pipelines located in less developed areas. The proposed gas pipeline for the Wanapa project would be approximately ten miles long, 24 inches in diameter, and would operate at a maximum pressure of 600 to 800 psi. The pipeline route would be partially co-located with existing utilities (other pipelines, roads) throughout its length. New right-of-way sections would be mostly located across farmland and rangeland. Agricultural land that would be crossed would remain in agricultural use. In combination, these factors reduce the likelihood of a severe incident along the Wanapa pipeline.

Based on historical data, the potential for an accidental release along any particular portion of the pipeline is statistically extremely low. The statistics presented in **Table 3.11-2** were derived from the U.S. Department of Transportation's (USDOT) incident database, a database that summarizes pipeline incident data throughout the U.S. and is continually updated. As mentioned above, the potential for a release is further reduced by the fact that the pipeline would be located in sparsely populated areas and in existing rights-of-way. The recent enactment of the Pipeline Integrity Management Rule for natural gas pipelines also should result in the further reduction in pipeline incidents, due to increased pipeline inspections and mandatory repair criteria.

The pipeline would be constructed in accordance with federal USDOT regulations, which mandates safety standards for pipeline design and construction. These standards are designed to minimize the potential for pipeline failure and accidental release. Construction of the pipeline is in accordance with these standards, the location of the pipeline route, and the lower operating pressure combine to minimize the potential for an accidental release that could impact environmental resources or the local population.

Natural gas pipelines in the U.S. are the safest mode for transporting natural gas. Statistics from 1989 to 2000 indicate that on average, almost 3, 24, and 200 times more people die each year in barge accidents, railroad accidents, and truck accidents, respectively, than die in all pipeline related incidents (natural gas and petroleum products). On a comparative basis, the entire natural gas infrastructure in the region of the facility is much safer than other forms of transportation to which residents of the area are exposed.¹

¹Peter F. Guerrero, Director, Physical Infrastructure Issues, United States General Accounting Office, Testimony Before the Subcommittee on Energy and Air Quality, Committee on Energy and Commerce, House of Representatives, *Pipeline Safety Status of Improving Oversight of the Pipeline Industry*, Tuesday, March 19, 2002, GAO-02-517T.

Responses to Letter 10

10-30 Cont'd

The commenter states, "...in the Northwest alone natural gas pipelines have blown up five times within the last five years." and the number of incidents: "...February 1999, two incidents in February 1997, March 1995, and two 2003 episodes."

Construction of what is today the interstate natural gas system began in the early 1900s. The federal standards concerning this system have evolved with the industry. The failures cited in the Northwest are associated with one type of pipeline installed almost 50 years ago. The project pipeline would comply with all applicable regulations and modern safety standards for new pipeline construction.

A reliable analysis shows that the newer and recently constructed pipelines which were installed under the stringent safety standards, are operating trouble free. For example, it is worthy of notice that all natural gas pipelines episodes in the Northwest, (except the 1999 incident) occurred on the same 46-year-old 26-inch mainline owned by Northwest Pipeline.¹ Further, the same aging issue also caused the 1999 failure.² In contrast, the slightly newer Gas Transmission Northwest (formerly PGT) pipeline system has had no significant pipeline accidents in its 40 years of operation.³

Comparison of the safety of a new 10-mile pipeline built with the latest in technology and under the most stringent modern standards of safety to anomalies in a system with relatively few failures across its 180,000 miles⁴ of aging interstate pipeline may yield inaccurate results. The developers of the project would require the construction of the project pipeline to be in accordance with the most recent applicable regulations, laws, codes and standards developed to insure safety and avoid the incidents that happened to the old pipelines which were built without such laws regulations, codes and standards and safeguards in place.

¹ Pipeline Safety Section History, Washington Utilities and Transportation Commission Pipeline Safety Section Natural Gas Leak History, <http://www.wutc.wa.gov>

² *Seattle Times*, December 20, 2003.

³ www.gtn.negt.com/safety/our_role.htm

⁴ www.ingaa.org

Responses to Letter 10

Mitigating Differences in the Wanapa Pipeline. The project's gas pipeline is only 10 miles in length compared to over 1,500 miles for Northwest or 612 miles for NGT. The project pipeline runs through fairly level open terrain, unlike its interstate counterparts that run through remote areas and rugged terrain with little or no access. Therefore, unlike the enormous, interstate pipelines, the project pipeline's entire length would be inspected. This results in the ability of the project pipeline to internally inspected 100 percent of its 10-mile system as compared to Northwest's 17 percent⁵ and NGT 12 percent⁶ and to hydrotest a much higher percentage of its 10-mile system, as compared to Northwest's 11 percent⁷ and NGT's 1 percent.

From the start of construction, the project's 10-mile gas pipeline would use the latest technologies in metal, coating, corrosion protection, welding methodology and other construction techniques. The improvements in technology since construction of the pipelines cited as dangers in the Northwest (e.g., modern fusion bond epoxy coatings versus coal tar coating or modern strong carbon steel engineered to meet standards set by the American Petroleum Institute versus cast iron)⁹ should greatly mitigate the dangers presented in the EIS comments.

⁵ **Washington State Pipeline Inspection and Integrity Review Summary of Preliminary Finding (Table: System Integrity Test)**, www.ops.dot.gov/bellingham1/WAstatefinalsummary.htm

⁶ Id.

⁷ Id.

⁸ Id.

⁹ www.naturalgas.org

From the perspective of the impacts on public health and the response needs of surrounding communities, the addition of 10 miles of new natural gas pipeline to the hundreds of miles of older pipelines already existing around these communities, would have no noticeable incremental impact on public health or to the region's preparedness requirements.

The commenter cites one example of a construction backhoe that caused a leak in a Northwest Natural Gas pipeline requiring the evacuation of seventy-five people. Once again, the addition of 10 miles to the hundreds of miles of pipeline the region would have no noticeable incremental impact. Further, the Northwest Natural Gas system is a distribution system, and as such, normally would be a much greater risk of construction damage than the Wanapa system. Northwest Natural must mark and monitor 12,000 miles¹ of gas distribution systems, while Wanapa must mark and monitor only 10 miles. New procedures introduced under the Pipeline Safety Improvement Act of 2002 should help mitigate the risks of third-party damage.

¹ www.nng.com.

Letter 10 Continued

The Northwest Pipeline through western Washington had two large scale explosions and fires caused by pipeline failure during 2003, mostly recently within the last few months.

There have been a total of 12 large natural gas pipeline explosions, since 1978 in the Northwest, including other ruptures in Stevenson, Washington, La Grande, Oregon, and Montpelier, Idaho.

A few years ago, a construction backhoe caused a leak in a Northwest Natural Gas pipeline recently in Rainier. Seventy five people were evacuated. There is other evidence regarding the potential impact on public health and safety from natural gas pipelines.

During 2000, at least six people were killed in a natural gas pipeline explosion near Carlsbad, New Mexico, and another six were injured. Landslides in Ventura county, California ruptured several natural gas pipelines in February, 1998, again after heavy rain. Between 1965 and 1986, there have been 250 pipeline failures in the United States as a result of stress corrosion cracking, caused by a combination of water, soil types, and gas temperature within the pipelines.

At least twenty-one people were killed since 1995 from natural gas pipeline accidents.⁹ A Transwestern Pipeline natural gas pipeline exploded on August 20, 1994 in New Mexico, near the Rio Grande River, damaging a bridge. An October, 1994 explosion of a pipeline in Torrance, California, injured 30. A December, 1989 pipeline rupture caused by a farmer's plow, triggered the evacuation of 600 people in Butler, Illinois.

In March, 1994, a natural gas pipeline exploded in New Jersey, killing and injuring scores of people and creating a 30 foot deep crater and a fire that destroyed eight buildings and severely damaged six more buildings. A Chemical Safety and Hazard Investigation Board data base search revealed 18 major gas pipeline explosions since June, 1998 in the United States

All of these pipelines were constructed to federal standards, and monitored by federal agencies. The DEIS should have explained, how with all the current federally required mitigation measures and careful engineering, pipelines can still blow up, and how the proposed pipeline lateral can be made safer.

The DEIS did claim in Table 3.10-2 there would likely be only .08 accidents over 30 years of service on the project's 10 mile pipeline, based on "historical statistics." There was not a single reference provided in the DEIS to buttress this assertion and there was no source presented for these statistics. The Northwest Pipeline through western Washington and Oregon has suffered from almost 30 significant releases of gas, including large explosions and fires, since 1994, according to published accounts. At that incident rate, (1 incident per year per 100 miles of pipeline) it would be probable that the Wanapa lateral will suffer at least three large gas releases during thirty years of operation.

New York Times, 4/9/97, p. 1.

Responses to Letter 10

Beginning in 2000, the federal government began enlisting the states in cooperative effort to improve pipeline safety by allowing more states to oversee a broader range of interstate pipeline safety activities. State pipeline safety inspectors are an invaluable resource for the Office of Pipeline Safety (OPS) because they are familiar with pipeline safety issues unique to their states.¹

¹Guerrero, *Id.*

On December 17, 2002, the Pipeline Safety Improvement Act of 2002¹ was signed into law. Congress crafted this legislation as an amendment to the 1994 Pipeline Safety Law, largely in response to pipeline ruptures in Carlsbad, New Mexico and Bellingham, Washington. The act applies to, among other facilities, interstate and intrastate natural pipelines and local distribution companies.

¹Pipeline Safety Improvement Act of 2002, 49 U.S.C.A. § 60101 et. seq.

This Act:

- Institutes mandatory inspections with periodic re-inspections of all U.S. oil;
- Permits the USDOT to order corrective action of a pipeline facility, including physical inspection, testing, repair, or replacement;
- Requires implementation of integrity management programs by the end of this year;
- Bolsters enforcement provisions by allowing for civil penalties for safety violations in an amount between \$25,000 and \$100,000 for each violation, and in an amount between \$500,000 and \$1,000,000 for a related series of violations;
- Directs USDOT to encourage operators to adopt and implement certain best practices for notification of leaks and ruptures ("one-call" systems);
- Directs the National Institute of Standards and Technology and the Departments of Transportation and Energy to work with an advisory committee to develop a plan that addresses critical research and development needs to ensure pipeline safety, thus ensuring continued progress in pipeline safety technology and knowledge; and
- Established public education programs to advise municipalities, schools and other entities on the use of the one-call notification system, possible hazards from unintended releases from a pipeline facility, what to do in the event of a release, and so forth. Considering the quantity of natural gas and other pipelines already existing in the area, the project would cooperatively merge its procedures into those already established.

¹Armgaradt, *President Bush Signs Pipeline Safety Improvement Act of 2002 Into Law*, www.articles.corporate.findlaw.com

Letter 10 Continued

- 10-30 These events could cause loss of life and property. Pipeline explosions are significant impacts. Additional protective measures, and the types of emergency responses, such as fire protection and health care emergency treatment, that must be provided to these explosions and fires and their victims, should be discussed and implemented. The problems that can cause this type of explosion should have been carefully explained at length in the DEIS.

ABILITY OF EMERGENCY SERVICES TO RESPOND TO PIPELINE RELEASE WAS NOT DISCUSSED

- 10-31 Even if the possibility of a pipeline release is slight, the ability of local agencies to respond to a remote natural gas pipeline explosion should also have been discussed, especially since the Wanapa plant and its associated pipeline lateral are in isolated areas and it will take time for emergency services to respond.
- The DEIS should have described the likely scenario of service incidents on the pipeline serving the power plant, perhaps by describing several of the recent explosions on this pipeline and at similar pipelines. The types of agency responses that would be required, and the adequacy of the local agencies to respond, should also be discussed.
- Descriptions of a range of several recent incidents should be provided, so that readers and persons submitting comments can be appraised of the possible impacts of service incidents. This is appropriate because service incidents can be expected over the life span for the pipeline lateral.

POWER PLANT ACCIDENTS

- The DEIS failed to discuss the potential for accidents and explosions at this proposed facility. On occasion, similar power plants have experienced fires and explosions that have damaged property and killed people.
- Just five days ago, on October 8th, 2002, a massive explosion at the Florida Power & Light natural gas fired Palm Beach plant rocked two counties, followed by a hydrogen-fed fire. The explosion shook houses and rattled windows, and was as loud as a sonic boom. In January, 2002, there was a hydrogen explosion and fire at the natural gas fired BC Hydro plant in Port Moody, BC.
- 10-32 Less than two weeks ago, on October 1, 2002, there was a nine-alarm fire at the Sithe power plant in Boston, that began in a hydrogen generator. The fire and explosion caused \$10 million in property damage.
- Hydrogen will be used and stored at Wanapa Power. But this potential impact from explosives and fires from caused or fed by hydrogen, and the ability of local emergency services to respond, was not adequately discussed in the DEIS.
- At the Sithe blaze, 180 firefighters had to respond. The natural gas fired turbine at the Doswell power plant in Virginia recently suffered an catastrophic fire and explosion. It took 75 fire fighters to quell the resulting fire The DEIS should have discussed what will happen if hundreds

Responses to Letter 10

- 10-31 The facility and the pipeline are within ten miles of the towns of Umatilla and Hermiston. The project would make the necessary arrangement with both of these cities' fire and emergency response teams to make fire and emergency services available for response to an incident. The pipeline route does not have any sections that have poor accessibility (e.g., "remotely" located) – the entire length (10 miles) could be readily accessed by emergency equipment from nearby roads and along the rights-of-way in the event of a release or incident.

Transportation of flammable gas would be done in a safe, efficient and effective manner. As with any responsible operator, a proper emergency response plan developed in coordination with local communities would be in place. Given the presence of other laterals to power generation facilities almost identical to the project and the hundreds of miles existing pipeline running through the area, no significant changes should be required. The project would integrate itself into the existing emergency response system.

- 10-32 Power plants are considered safer than most major industrial facilities. While fire and explosion accidents occasionally have occurred at power plants, these plants are designed and operated according to strict building, engineering, and operating codes and standards to minimize the potential for serious incidents. The plant would hire the most skillful operators and would conduct safety trainings to minimize human error in causing accidents. Staff of the Wanapa Energy Center would include a risk management and compliance officer.

Risk of Fire and Explosion. The proposed project would use natural gas and distillate fuel oil for equipment combustion firing, lubricating oil for equipment operation, and mineral oil for transformer operation. The natural gas fuel would be used for powering the four combustion gas turbines, duct firing in the four HRSGs, and building space heating

Natural gas would pose a fire and/or explosion risk because of its flammability. Although natural gas would be used in significant quantities, it would not be stored onsite. Risk of fire and/or explosion would be reduced through adherence to applicable laws, ordinances, regulations and standards, and the implementation of effective safety management practices in all areas of the generation plant. Fire prevention and suppression measures that would be included within key areas are listed in the paragraphs that follow.

Responses to Letter 10

10-32 Cont'd

The generation plant fire protection system would include:

- A dedicated firewater storage supply in the service water storage tank, sized in accordance with National Fire Protection Association (NFPA) 850 to provide 2 hours of protection from the on-site, worst-case single fire (NFPA 850, Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations);
- An electric jockey pump and electric motor-driven main fire pump to increase the water pressure in the power plant fire mains to the level required to serve all water fire fighting systems;
- A diesel engine-driven fire pump to pressurize the fire loop, if the power supply to the main fire pump fails;
- A dedicated underground firewater loop piping system with fire hydrants and the fixed suppression systems supplied from the firewater loop;
- Fixed fire suppression systems installed at determined fire risk areas such as transformers, turbine lubrication oil equipment, and the cooling towers;
- Sprinkler systems installed in the fire pump building as required by NFPA; and
- Hand held fire extinguishers of the appropriate size and rating located in accordance with NFPA 850 throughout the facility.

The combustion gas turbine-generator units would be equipped with

- Gas detectors that alarm when combustible gas in the combustion gas turbine unit enclosures reaches approximately 25 percent of the lower explosive limit;
- Automatic shutdown controllers for the natural gas supply trip valves if the combustion gas turbine concentration reaches 60 percent of the lower explosive limit;
- Vent fans in the combustion gas turbine enclosures to ventilate any collected gas; and
- Thermal fire detectors and smoke detectors located throughout the combustion gas turbine generator enclosures; actuating one sensor would provide a high temperature alarm on the combustion gas turbine control panel; actuating a second sensor would trip the combustion gas turbine, turn off ventilation, close the ventilation openings, and automatically release gaseous carbon dioxide to quench the fire.

Responses to Letter 10

The steam turbine-generator units would be supplied with

- Bearing preaction water spray systems that would provide fire spray water to the steam turbine-generator bearings in case of a fire; and
- Fire detectors and an automatic water-deluge water spray system for the steam turbine-generator lube oil areas.
- Each major transformer would be supplied with
- A deluge spray system in case of a fire;
- Concrete foundations with crushed rock and curbs to contain a fire; and Block walls as fire breaks between transformers.

The cooling towers would be supplied with a dry-pipe water spray system in case of a fire.

To control overpressure of the natural gas piping systems downstream of the valve station, relief valves would be installed with discharge to a safe location. The released natural gas should rapidly dissipate into the air. A system alarm would sound in the control room. No natural gas would be released to the atmosphere from upstream of the control valve station.

A comprehensive communication plan would be developed to coordinate responses to fire and explosion emergencies at the project site. This comprehensive plan would be part of the fire prevention plan during operation. At least 90 days before the start of operation, a meeting would be held that would include the plant operations and maintenance contractor, the developer, and Fire District to coordinate all operational response requirements and communication details.

In addition to the safety systems, risk to the public and private property would be further reduced by the Wanapa project's location within a sparsely populated area. No residential or other occupied structures are located immediately adjacent to the project facility. The closest residential structure, which is the Two Rivers Correctional Facility, is approximately 1 mile from the plant. Given the sparse population in the vicinity of the plant, the requirements for plant design, its operation under applicable safety codes, and the presence of safety systems on site, the potential risk to environmental resources or the local population is low.

Hazardous materials that would be used during the operation of the proposed project are listed in Section 2.3.1.3. Hazardous materials such as paints and lubricants would be stored in the fenced area to be located in a safe area. Any hazardous waste materials generated during construction or operation would be periodically removed by and transferred to a licensed hazardous waste disposal area by a waste disposal contractor.

Letter 10 Continued

of fire fighters are needed to respond to a problem at the isolated, rural Wanapa location. There was no discussion of whether nearby fire departments even possess the types of modern, sophisticated equipment, such as foam applicators that can administer foam from above the fire, that will be needed to fight a fire that is fed by large quantities of natural gas, diesel, lube oil, hydrogen, ammonia and other toxic materials.

There were other explosions and fires at power plants recently. An explosion and fire rocked the Black Hills Power and Light power plant in Wyoming, in June, 2002. A back-up generator blew up and caused a "major" fire at the Allegheny Energy plant in Pennsylvania, in July, 2002. Firefighters from at least five communities had to respond to the blaze. A pressure relief valve activation at the Mirant plant in Zeeland, Michigan in August, 2002 caused diversion of traffic, to avoid released gasses.. Three workers were killed at a fire in the O'Brien Newark, New Jersey Cogeneration power plant recently. At least 20 other fires have been recorded over the last 10 years at power plants, causing another death and \$417 million in property damage. The most severe fires often involved the release of lube oil, which ignited. Lube oil will likely be stored at Wanapa, although it was not discussed in the DEIS.¹⁰

Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil. The dangers from use and storage of these materials was not discussed in the DEIS. These kinds of serious accidents, and the ability of local emergency response units to respond, are significant impacts that should have been discussed in the DEIS.

There were 272 to 557 equipment failures and accidents per year at power boilers and pressure vessels since 1992, causing almost 200 injuries and 29 deaths, and another 145 to 387 failures, and another 270 injuries and 54 deaths, from unfired pressure vessels, according to Power Magazine, Jan-Feb., 2001, p 53.

Because Power plants typically store and use many materials that present a danger of fire and explosion, such as hydrogen and lube oil, some of these hundreds of annual accidents at power plants cause injuries, and losses of life and property beyond the power plant boundaries, and require a large response of emergency personnel, as previously described. The dangers from the use and storage of these materials, and the ability of local fire departments to respond, was not discussed in the DEIS. These kinds of serious accidents are significant impacts that should be discussed in an EIS.

CUMULATIVE EFFECTS OF INCREASED USAGE OF NATURAL GAS

The EIS did not discuss the adverse impacts from the increased exploration and processing of gas in Canada, in part sparked by the development of these this project. Discussions of Canadian impacts is mandated by Presidential findings during the Carter Administration regarding the scope of NEPA-covered projects. A description of Cross-border impacts are also appropriate,

¹⁰Most of these narratives are from the Chemical Safety Board's web site.

Responses to Letter 10

10-33 Although the commenter cites no authority for the assertion of a Presidential mandate, research indicates that the reference is likely Executive Order 12114 passed by President Carter on January 4, 1979. This Executive Order only sets forth a requirement for federal agencies to establish procedures to address impacts of certain actions. Section 3.1 explicitly limits the Order to establishing these federal agency procedures and states that the Order does not create any cause of action. The use of the Order to expand its intent to include the Wanapa project is incorrect.

However, even if the Order were applicable, Wanapa would not be required to address impacts of increased production. Of the actions requiring agency procedures set forth in the Order, the only provision potentially applicable in this situation would be Section 2-3 (b) "major Federal actions significantly affecting the environment of a foreign nation *not participating with the United States and not otherwise involved in the action* [emphasis added];"

The Wanapa project utilizes existing gas transportation capacity; as such, no environmental decisions are required to be discussed for pipelines in Canada. The commenter implies that the project's presence in an existing, fully developed, export-import market fully approved by both the Canadian and U.S. governments of 9.5 billion cubic feet of gas per day (9,500,000 decatherms (Dth)/ day) would create significant environmental issues. Even if this implication was true, the Executive Order applies only when the foreign nation is not involved. Canadian natural gas exploration and production is heavily regulated at both the federal and provincial levels. Exports and import to and from the U.S. are governmentally approved and an integral part of the energy system of both countries. The Canadian government is fully engaged in all aspects of this market from exploration through export. Therefore, even if the increased market for natural gas had significant environmental impacts, this Executive Order would not apply because the Canadian government fully participates in the action and would have addressed any environmental concerns presented in Canada.

Finally, Section 2-5 (i) explicitly exempts "actions not having a significant effect on the environment outside the United States as determined by the agency." The Wanapa Energy Center would be an extremely minute participant in the U.S.-Canadian gas market. Even assuming all the natural gas consumed by the project was imported from Canada, the project's maximum consumption of 250,000 Dth/day represents less than 1 percent of Canada's 17,400,000 Dth/day production.¹ Nonetheless, as stated earlier, Canada has a well developed scheme to protect the environment from potential issues created by increased production. The project does not create any significant environmental impacts outside the U.S., and therefore, falls within the exclusion of Section 2-5 of the Order.

¹ http://www.capp.ca/default.asp?V_DOC_ID=690

(2002 production numbers from the Canadian Association of Petroleum Producers).

10-32

10-33

Letter 10 Continued

- 10-33 considering that the Canada Energy Board requires assessments of impacts in the United States, when evaluating proposals for Canadian pipelines.

COOLING TOWER DRIFT

The cooling towers are PM-10 and TSP sources, to the degree which the cooling water contain solids, which are emitted from the cooling tower exhaust as particulate. A large power plant using water high in solids content can emit tons per year of PM-10 and TSP. Cooling tower emissions contain salts, metals, water treatment chemicals, and other contaminants, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

- 10-34 An air quality expert examined the cooling tower emissions from Goldendale Energy, a 250 MW plant, and provided calculations to determine the amount of "drift" that will be produced. When those calculations are scaled to the Wanapa plant, then a potential 100 ton/year of particulate, including salts would be emitted. The DEIS calculates far lower figures, but does not provide the basis for their calculations. The DEIS should have provided those calculations for double-checking, and should examine the potential for higher emissions than what is predicted in its own best case modeling.

Even with the lower predicted figures, measurable adverse impacts are predicted from cooling tower drift and salts deposition. Switching to full air cooling would also reduce PM and TSP emissions, since a cooling tower will no longer be needed.

The DEIS should have provided data, such as the TDS of the circulating water, the percentage of cooling tower drift, the circulating rate of the water, and the numbers of cycles of circulation, so their figures on the cooling tower drift can be verified. The DEIS should have calculated the emissions of metals, water treatment chemicals, and other contaminants that are present in the cooling water, which could degrade the quality of soils, and affect human health, wherever the cooling tower drift is deposited.

LEGIONNAIRES DISEASE

- 10-35 The DEIS did not provide a table of materials stored on site that listed biocides known to be effective against Legionnaires Disease. This disease breeds in moist, warm climates, including cooling towers such as those to be used by the plant. It has been spread through the discharge of steam from cooling towers. In March, 2001, for instance, two Ford employees died in Ohio after exposure to Legionnaires' Disease, spread by the facility's industrial cooling towers. Legionnaires Disease organisms have also been found in the CEGB power plant's cooling tower water, near Stafford, England. Since it is not apparent that Wanapa plans to use appropriate chemical treatment of its cooling tower system to stifle development of the relevant bacteria, there is a threat of Legionnaires Disease from this facility. This should be discussed in a revised DEIS.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

- 10-36 The alternative of burying power lines associated with this project should be discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of

Responses to Letter 10

- 10-34 The cooling tower would be equipped with drift eliminators with highest commercially available drift elimination efficiency (0.0005 percent of circulating water flow). In addition, to reduce the PM₁₀ contribution of the drift, the air permit would include TDS limits in the cooling tower (see response to Comment 10-12). This TDS limit, to reduce PM₁₀ would make it necessary to operate the tower at lower cycles of concentration. The PM₁₀ emission from the cooling tower would be within the limits of the air permit. The USEPA checks the PM₁₀ calculations in order to establish limits. Air-cooled plant considerations are discussed in response to Comment 10-3.

- 10-35 The microbes that cause Legionnaire's disease may occur in heating, ventilating and air conditioning (HVAC) systems that incorporate moist or water-cooled sections and components. These HVAC systems can have cooling towers associated with them; however, the towers are usually utilized for non-contact cooling, where the cooling tower water is not in direct contact with the HVAC components that move air (the cooling water does not directly contact the air). The projects' cooling towers would be treated with sodium hypochlorite, which is a highly effective microbiocide. Uncontrolled microbiological growth in a cooling system can cause serious interference with heat exchange and associated operating equipment so it must be controlled. The project's cooling system would be operated to meet all applicable laws and regulations and the cooling water could not be utilized for HVAC systems.

- 10-36 The project would transmit its power across the 500-kV lines. Burial of the 500-kV lines are not feasible. Reasonable circumstances for constructing transmission lines under ground would be marine crossings or dense urban areas. The additional equipment required, such as insulating fluids, high-pressure pumps, and temperature-monitoring equipment, would significantly increase costs of construction. In addition, the relative difficulty of maintaining and repairing underground transmission facilities make an underground line less reliable.

The commenter suggests that the new line would create an avian collision hazard. However, studies have found that such problems occur only in very specific, localized situations where birds in flight must frequently cross a power line within their daily use area. (Edison Electric Institute, 1994. Mitigating Bird Collisions With Power Lines: The State of the Art in 1994. Washington, D.C.)

The commenter also suggests the line would cause significant visual impact and increase human exposure to electromagnetic fields; however, the line would be located on mostly unpopulated land. Finally, underground construction would cause substantially more ground disturbance than overhead construction. Underground construction is not a reasonable alternative for a 500-kV line because it offers no environmental advantages to overhead construction in this situation, would be significantly more expensive, and would be less reliable with potential for harm and loss of life.

Letter 10 Continued

Responses to Letter 10

these projects, and may reduce EMF exposure, and the impacts to avian species which collide with above ground power lines.. Bird Mortality from the new power lines and EMF exposure are other potentially significant impacts that should be discussed in the DEIS, and power line burial should be discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas.

POWER LINE BURIAL ALTERNATIVE AND ELECTROMAGNETIC FIELDS (EMF)

The alternative of burying power lines associated with this project should have been discussed in the DEIS. Power line burial has been used at many projects, and would reduce the visual impact of this project, and may reduce EMF exposure, and would reduce the impacts to avian species which collide with above ground power lines.. Bird mortality from the new power lines is a significant impact that should have been discussed in the DEIS, and power line burial should have been discussed as a mitigating factor, and a method of avoiding impacts on the nearby sensitive areas, including the 2.5 acres of potentially impacted wetlands.

While the DEIS at 3.3-23 does recommend avoidance of partitioning foraging and resting habitat, the proposed new lines' Alternative 1 borders the nearby Wanaket Wildlife area. Other alternative routes pass over 4 wetlands (p. 3.3-23). The DEIS states at 3.3-10 that "Waterfowl also represent an important biological component of the Wanaket Wildlife Area," and that bird counts have totaled as many as 162,610 during 1986-7. Even if habitats are not partitioned, the proximity of new transmission lines to areas, including open waters, that are heavily used by many birds, is a significant adverse impact that may constitute a taking of habitat.

While Transmission Line avoidance of habitat is important, in all cases the transmission lines will be relatively near the Wildlife Area. But the DEIS did not discuss burial of the transmission lines as an alternative project design. In one study of 2,000,000 examples of non hunting related waterfowl mortality, about half 3000 non-hunting deaths were due to striking wires. The study's author recommended that wires in areas of high waterfowl use be buried.¹¹

Another study of high voltage lines crossing a slag pit near the Kincaid Power Plant, found that 200 of 400 waterfowl were killed by colliding with these lines. Mallards and Coots constituted 62% of the killed fowl.¹²

A third study concluded that the increased construction of power plants and associated

¹¹Cornwell, CW. 1986 Needless Duck Deaths. Conservation Catalyst 2(4):15-18.

¹²Sanderson, GC and Anderson, WL. 1981. Waterfowl Studies at Lake Sangchris, 1973-77. Illinois Natural History Survey Bulletin 32 (article 4): 656-689.

Letter 10 Continued

transmission lines may pose a significant hazard to birds in the plants' vicinity.¹³

There are many examples of burial of high voltage power lines of considerable length. Some example of actual and proposed burials of large pipeline include the 345 kV line that would be buried for 1700 feet to go under the Namekagon River near Trego, Wisconsin.

Sierra Pacific is burying a 14,000 volt line for about 2000 feet near downtown (Lake) Tahoe City, according to the company's June 9, 1999 press release.

Sierra Pacific is also burying a 120,000 volt (120kV) line for about 1700 feet near Carson City, Nevada, according to the company's April 19, 1999 press release.

Sierra Pacific's longest underground line is 2.6 miles, according to their Media Relations department.

10-36 The California Public Utility Commission's consultants, Aspen Environmental, prepared a study of an all-underground route for a 230 kV line near Pleasanton, California (Pleasanton Weekly. "Objectors, Proponents speak out on PG&E Power Line Plan." 2/16/01)

The Sumas II Power Plant has proposed a buried 230 kV line for 1.4 miles, in Abbotsford, Canada, as part of its trans-border proposal. (Canada Newswire. "NSB Receives a Revised DEIS from Sumas Energy II to Construct an International Power Line." October 2000)

The Sargent & Lundy engineering firm's website lists several underground transmission lines for which they provided engineering, including a 115/138-kV line, a 230 kV line in Washington Dc, a 1800 foot 115-kV line in Baltimore, five 230-kV lines in China, two 69 kV lines in Iowa, a 1300 foot 138-kV line in Tennessee, and a one-mile, 138-kV line in Salt Lake City.

This litany of buried transmission lines indicates that this is a practicable, feasible and economic alternative design for this portion of the project. It would reduce the impact on avian species, and would reduce the visual and land use impact of the project. For this reason a burial alternative, should have been presented in the DEIS.

SOLID WASTES

10-37 Water treatment for a large power plant can generate as much as 15 tons per month of wastes, called filter cake. There are other waste streams, including spent catalyst, which is a hazardous waste. Catalyst wastes could be avoided by used of the SCONOX scrubber system. These impacts

¹³Krapu, GL, 1974. Avian Mortality from collisions with overhead wires in North Dakota. Prairie Naturalist 6(1): 1-6. Abstracts of these three, and additional studies were found at http://www.energy.ca.gov/reports/avian_bibliography.html

Responses to Letter 10

10-37 The primary source of solid waste from a natural gas-fired power plant with SCR air emission control systems are spent catalyst from the SCR and sludge generated by the water treatment system. Other wastes are generated in small quantities and include office waste from plant personnel and solvents, paint and used oils from plant maintenance.

The largest volume of waste would be from the water treatment system. The raw water treatment system at the project would be a vendor-supplied system that would generate sludge from the treatment of water. These wastes are not considered hazardous waste and would be transported and disposed of off-site by a licensed contractor. Maintenance wastes, some of which are hazardous, would be removed and disposed of off-site by a licensed contractor. Spent catalyst from the SCR, which is removed periodically, also is a hazardous waste and would be handled by a licensed contractor. Since none of these wastes would be disposed of on-site and licensed contractors would handle all of these wastes, there would be minimal risk of these wastes being released at the facility.

See response to Comment 10-22 related to the issue of SCONOX.

Letter 10 Continued

10-37 were never described adequately in the DEIS. The materials contained in this wastes, its destiny, and its impacts on landfill capacity should all have been discussed.

STORM WATER RUNOFF AND SPILLS

The project will include the creation of several acres of impervious surfaces. This will cause the generation of millions of gallons of storm water runoff. This water will be tainted with oil, grease, and other contaminants present on the site and its parking lot and roof. The DEIS should have describe adequately the quality of this runoff, its destiny, and its potential impacts on ground and surface waters. The DEIS should have described to what degree it will treat the storm water before it is allowed to infiltrate into the ground water.

10-38 While an oil/water separator will be present, the DEIS should have identified the degree to which storm water will be channelized through the separator. The DEIS should describe the fate of wastes that are separated from the storm water. The DEIS should describe the project's compliance with typical State Storm Water Management rules. For instance, use of oil/water separators is actually criticized as having limited application, in Washington's storm water guidance manuals. The DEIS should describe why a separator was appropriate for this location, or why alternative methods of storm water pollution were not studied.

A list of all miscellaneous cleaners, lubricants and gases with quantities should have been available in the DEIS. Some glaring items missing are Acetylene, Argon, Radioactive materials for X-ray equipment, Gasoline, Carbon Tetrachloride, Hydrogen, Propane, Ethylene, Dynamite, Halon, etc. A list of all materials used on previous construction and procedures to handle them must be submitted.

GLOBAL WARMING

10-39 The DEIS did not inform its reviewers that the plant will emit millions of tons of carbon dioxide, a known and potent greenhouse gas. This failure to provide this basic information is a NEPA violation. Instead the DEIS provides a misleading discussion suggesting that the project was "efficient." The DEIS also inferred that the project would possibly meet State of Oregon standards for CO2 emissions, without informing reviewers that even if it met Oregon standards, Wanapa would still be required to pay tens of millions of dollar in CO2 mitigation fees. **The** DEIS then bluntly terminates its one-paragraph discussion of this important topic by stating "No mitigation measures are proposed."

This in not a legally adequate discussion. The DEIS is obligated to discuss the magnitude of Wanapa's CO2 emissions, and the types of mitigation payments that would be legally required by Oregon if this plant were subject to State regulations. If no mitigation is forthcoming, at least reviewers would be aware that the Wanapa plant is going to escape millions of dollars in CO2 mitigation payments, that all other thermal power plants in Oregon, and future plants in Washington will have to pay.

Responses to Letter 10

10-38 Accumulated storm water from the site would be routed to a detention pond. The primary contaminant would be suspended solids with minor amounts of oils and other materials. The storm water pond would be lined so the potential for contamination of groundwater would be negligible.

The risk of oil contamination of storm water is greatest in the power block area where the transformers and turbine lube oil tanks are located. All storm water from these and other such areas would be routed through an oil/water separator to remove and collect any oil. Water from the oil/water separator would flow to the retention pond. The oil/water separator would be regularly inspected for proper operation and a licensed contractor would remove the collected oil on a periodic basis.

The project would obtain a Storm Water Discharge Permit from the USEPA Region X and would develop and implement a Storm Water Pollution Prevention Plan. This plan and implemented Best Management Practices (BMPs) would meet all requirements of the permit.

Miscellaneous solvents, cleaners and lubricants that would be used for maintenance activities at the plant would usually be stored and used in small consumer quantities such as those purchased in hardware stores. Large quantities of these materials would not be used at the project facility.

10-39 See response to Comment 10-3.

Emissions of carbon dioxide (CO₂), methane, and nitrous oxide from the project have been estimated at the rates shown in **Table** below when operating at maximum firing rates.

Table
Greenhouse Gas Emissions from Wanapa Energy Center

Pollutant	Annual Emissions (1,000 tons)	Global Warming Potential (GWP) 100-year	Annual Emissions, CO₂ Equivalent (1,000 tons)
CO ₂	4,594.6	1	4,594.6
Methane	0.28	21	5.8
N ₂ O	0.0055	310	1.7
Total			4,602.2

No mitigation measures for CO₂ are required under NEPA. However, the project intends to mitigate for CO₂ emissions through the Wanapa Environmental Foundation.

Letter 10 Continued

SOCIO-ECONOMIC IMPACTS DURING CONSTRUCTION

The developer has not made any commitment to maximize local hire of its construction work force. This means that potentially one-half or more of the construction workers, or as many as 500 workers, given the experience in the Calpine/Hermiston job, could be imported into the area at the job's peak. Many studies show that on a lengthy job of this nature, more than half of the married workers will bring their families. This means that hundreds of children could be added to local schools for up to a year or more. There will be impacts on housing, jails, libraries, health care, and other social services.

The DEIS should describe the potential socio-economic impacts during the construction phase of a power plant or large industrial project, as revealed in public and private studies of the power plant in Boron, California, and the USS-Posco steel mill in Pittsburg, California. The Wyoming Industrial Siting Council considers that if only 60% of imported construction workers bring their families, that is a low "moving in" rate. The DEIS says at 3.9-14 that only 30% of the construction workers will be hired locally. If 60% of the construction workers bring their families, there will be hundreds of additional children in local schools for the two year life of the project.. This and other socio-economic impacts, and meaningful mitigation measures, should have been described in the DEIS.

The DEIS at 6.3.5 admits that there will be traffic impacts; but these estimated nature of these impacts, including the potential of over 100s of Cars every day during peak construction periods was never discussed, nor were any mitigation measures presented.

While the DEIS at 6.3.6 states that state noise standards will be met at the property line, there are additional standards to be met at the nearest receptor. The DEIS does not describe the noise impacts at the nearest residences or noise receptors.

The DEIS claims that the project will contribute taxes to the local and regional economy. The project will not be obligated to pay any property taxes, and testimony presented at prior public meetings described situations under which the burdens on local services caused by the power plant, especially during construction, will not be mitigated by future government revenues.

Responses to Letter 10

10-40 See Response to Comment 6-6

Construction traffic would be coordinated with local authorities so that traffic congestion would be avoided. Due to the plant's proposed location in a remote site, there would likely be no traffic impacts in and around the project facility.

Based on the information from the nearby Coyote Springs project constructor, which was built by the Washington Group in 1996 and 1997, the following information is available regarding labor figures. On the Coyote Springs project, over 60 to 65 percent of the labor work force commuted daily either locally or from the Tri Cities area (which is considered local). The remaining 35 to 40 percent stayed in motels or RV parks. The average stay for a worker was less than 1 year. Washington Group indicates that very few of the craft or construction personnel brought their families with them, resulting in no impact to the local schools. These families did, however, contribute to local businesses by frequenting local restaurants, convenience stores, hotels, motels, trailer and RV parks.

The project would comply with the State noise standards. In addition to meeting state noise standards, the plant would not impact existing ambient noise levels locally. The nearest noise receptors are more than 1 mile away at the Two Rivers Correctional Facility and a residence over 2.5 miles away; these receptors are not expected to be susceptible to any plant noise.

Regarding the property tax issue, see response to Comment 11-2.

Letter 10 Continued

ENDNOTES

1. Sources for Copper Discussion

April, 2002. Parametrix. Biological Review. Tri-County Model 4(d) Rule. Response Proposal. Prepared for Tri-county Salmon Conservation Coalition.

Stratus Consulting. Lipton, J. Hansan, JA. Welsh, PG. Cacela, D. Critical Body Residues for Metals: Evaluation of Relationship between Copper Accumulation and Effects in Rainbow and Bull Trout. Boulder, Colorado.

Materna, Elizabeth. Temperature Interaction. EPA Region X Water Quality Criteria Guidance Development Project.

EPA. Gold Book; Water Quality Criteria, 1986.

Baldigo, Barry and Baudanza, Thomas. Copper Avoidance and Mortality of Juvenile Trout in Tests with Copper Sulfate Treated Water. USGS. Report 99-4237.

Golding, S. Ecology publication 95-305. Metro Renton Wastewater Treatment Plant Class II.

Dietrich, Andrea. Evaluation of Pollutants in Source and Process Waters used in Shellfish Aquaculture. Virginia Tech.

2. SOME NEARBY NOX SOURCES

BOARDMAN POWER PLANT

17762 TPY (Tons per year) of NOX.

This is a coal fired power plant near Boardman, Oregon.

COYOTE SPRINGS POWER PLANT

This plant, near Hermiston, Oregon, has one turbine emitting 287 TPY of NOX. It was permitted in 1995. Another turbine was permitted in 1995, which is under construction. It will emit another 287 TPY.

HERMISTON POWER PARTNERS

This plant was permitted for 270 TPY of NOX in 1995. Later permit amendments bumped them to 314 TPY. It is now operating.

US GENERATING

This 500 MW power plant, shows 270 TPY of NOX emissions. It was permitted about five years ago.

PIPELINE COMPRESSOR STATIONS

The Northwest Pipeline, and the Pacific Gas Transmission natural gas pipelines, both run through the Columbia River area. Both pipelines utilize several compressors/pumps that are large NOX sources, including the Roosevelt compressor station in Klickitat County.

PGET

NOX EMISSIONS COMPRESSOR INVENTORY

Ione: 621 TPY.

Letter 10 Continued

Kent	261 TPY
Starbuck	177 TPY
Wallula	85 TPY

NORTHWEST PIPELINE

Their pipeline runs along the Columbia from Clark County, Washington (Washougal) to Hermiston, and branches northeast towards Spokane, and southeast towards Boise. Oregon Department of Environmental Quality (DEQ) files states this pipeline has compressor stations every 50 miles. An Oregon DEQ emissions inventory did list the following nearby compressor stations:

Stanfield	15.2 TPY of NOX.
Meacham	585 TPY, according to their permit renewal in 1996.
Rosalia	Recent 85 TPY increase

There are other compressor stations along the pipeline route in Washington on the Northwest Pipeline, with large NOX emissions, including the Washougal and Klickitat/Roosevelt stations.

The NW pipeline compressor in Baker County, Oregon, increased its NOX emissions in 1997 from 131 to 257 TPY.

Compressor station known total: 2100 TPY of NOX, not counting Baker City, Plymouth, or Roosevelt. These compressor stations were not apparently included in the cumulative air impacts analysis.

OTHER EXISTING NOX SOURCES IN NORTHEAST OREGON AND SOUTHEAST WASHINGTON

<u>NAME</u>	<u>NOX IN TPY</u>
UW/Pullman	250
Boise/Wallula	recent 658 tpy increase-1700 ton total
Kinzua	153
Boise	>385 La Grande
Boise	>250 Elgin
Co-Gen II	187 Prairie BPA and Benton County
	900-odd total

Both of the smaller Boise facilities were significant NOX sources, that conducted several expansions and increased their NOX emissions, since 1984 to the present. Their actual NOX emissions are not known, since they did not get the required permits from DEQ prior to these expansions. The EPA has a Notice of Violation pending against both facilities. These two facilities did not submit to the PSD process--yet.

UNDER 100 TPY-NOX

Joseph Lumber	36	Joseph
Dee Forest	53	Hood River
Grant Western	38	John Day
Simplot	97	Hermiston
Lamb-Weston	70	Hermiston
	300-odd total	

PROPOSED NEW POWER PLANTS AND NOX SOURCES

WALLULA

This 1300 MW project will emit about 434 ton/year of NOX and 1400 ton/year of total criteria air pollutants, and another 380 ton/year of ammonia, which could contribute to another 1600 ton/year of secondary particulate formation.

Letter 10 Continued

GOLDENDALE SMELTER CLIFFS PROJECT

The BPA recently issued a ROD for a new turbine at this facility, which will emit about 100 TPY of NOx. This facility, and the Boise/Wallula Mill expansion was left off of the cumulative impact-air quality list.

GOLDENDALE ENERGY

This 249 MW power plant will come on line in 2004, producing about 77 TPY of NOx.

AVISTA/LONGVIEW

This 300 MW plant will be across the street from the Weyerhaeuser mill. It will emit about 100 ton/year of NOx, and another 200 ton/year of other pollutants. Its construction was recently halted but it is about 70% complete.

UMATILLA AND MORROW GENERATING

These proposed plants by PG&E National Energy will generate about 1000 MW and produce about 500 TPY of NOx. The Umatilla plant is fully permitted.

PACIFIC RIM ETHANOL

This proposed alcohol refinery near Moses Lake will emit about 100 TPY of NOx and about 350 TPY of total criteria pollutants. It was not cited in the cumulative air impact analysis.